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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,166	09/08/2003	Wolfgang Albrecht	NI 156	1545

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EXAMINER

FORTUNA, ANA M

ART UNIT PAPER NUMBER

1723

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

6

Office Action Summary	Application No. 10/662,166	Applicant(s) ALBRECHT ET AL.	
	Examiner Ana M. Fortuna	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 11-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11, line 3, the term "chemical group made from a polyimide body", is unclear as to what is intended. The term polyimide body is redundant in the term above.

The rejection bellow is discussed on paper of 7/08/2005, and is maintained.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 3, 4, 5, 6, 8, 9, 11, 12, 13, 14, 15, 16, 18, 19, are rejected under 35 U.S.C. 102(b) as being anticipated by Friesen et al (US Patent 5,753,008)(hereinafter Patent '008).

Patent '008 discloses a composite membrane includes a support and a selective coating for the composite, e.g. hollow fibers (column 2, lines 25-42).

The support is selected as a polyimide membrane (column 4, lines 48-55).

Regarding claims 6, 9, asymmetric microporous polyimide support is disclosed in Patent '008 (column 5, lines 30-44).

The coating is selected to be hydrophilic and selected from polyamines, e.g. modifier (column 6, lines 7-12). The coating solution is formed from a solution containing water and polyethyleneimine (PEI) and water (column 8, lines 24-26)

Patent '008 also discloses contacting the coating solution for about 1 minute with the support (column 8, lines 38-50), The membrane of patent '008 is further heated, cleaned and dried, e.g. by the action of passing nitrogen into the lumen of the hollow fibers at 80 degree C. As to claims 1 and 5, the PEI meets the modifier requirements. Regarding claims 2-3, the temperature treatment at 80 degree C, as disclosed in the patent above is within the claimed ranges.

As to claim 4, the modifier concentration is also disclosed (column 8, lines 24-126).

Regarding claim 8, Patent '008 discloses methods for applying the coating of the modifier solution to the support, and further disclose its application to the inside or to the outside to the base membrane (column 6, last paragraph, bridging with column 7, lines 1-3), which teach the application of the coating at the side of the smaller pore size or at the larger pore size (support layer) of the support "asymmetrical membrane".

Claims 2-6, 8-9, correspond to limitations of claims 12-16, and 18-19 respectively, and are discussed above.

3. Claims 1- 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Linder et al (5,049,282)(hereinafter Patent '282).

Patent '282 discloses the membrane including a support and a layer of polyamine compound, the support can be selected to be a polyimide support (column 2, lines 51-60), and the polyamine can be formed from primary, secondary amines, etc. (column 4, lines 14-63).

The layer formation or modifier treatment including heating is also disclosed (column 3, lines 40-63).

The percentage of the modifier, e.g. amine is suggested, and the time and temperature conditions are also disclosed (column 10, lines 49-68, column 12, lines 22-36).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 10, 17, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friensen et al (Patent '008), as applied to claim 1 above and optionally in view of applicant's disclosure. Patent '008 fails to disclose pore size formation on its active layer, e.g. layer formed by the modifier (or polyamine layer), however, based on the layer formation in which the solution contains water and is formed in presence of alcohol and crosslinking agent, one skilled in the art at the time the invention was made can expect pore formation, since both agents (water and alcohols), are pore formers. As to claims 10, and 20 Patent '008 discloses the support as limited only by their permeability and solvent resistance (column 4, lines 47-59). Applicant discloses the polyimide

membrane support as known in the art (specification, page 11, third paragraph). It would have been obvious to one skilled in the art at the time the invention was made to use a membrane having the properties claimed in claim 10, and available in the market, as recognized by the Applicant, as support for the membrane of 'patent '008, based on the inherent polyimide membrane properties, when made from a spinning solution resulting in an asymmetrical membrane.

Response to Arguments

6. Applicant's arguments filed 10/06/05 have been fully considered but they are not persuasive. Applicant argues that Us patent 5,753,008 does not disclose cleaning the membrane after its contact with the modifier. The claimed limitation is disclosed in the '008 patent (see column 8, example 2), the support is treated with the solution containing the amino groups, and drained, and after that, gas is passed though the inner side of the support (membrane), inherently cleaning any remaining (non reacted) residues of the coating solution and heat the membrane support, further drying the membrane. The rejection over patent '008 is maintained.

Regarding patent '282 (Linder et al). Applicant argues that this patent does not teach coating the support (polyimide) with aqueous modifier solution. Applicant's attention is directed to column 8, lines 2-8, column 9, lines 56-68, through column 10, lines 1-24), in which sections the teaching of coating a support with "aqueous solution containing primary or secondary amines, optionally with the addition of a cross-linker, is disclosed. The rejection under 103 has been withdrawn because the claims are rejected under 102, which is maintained as discussed above.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M. Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Ana M Fortuna', is positioned above the printed name.

Ana M Fortuna
Primary Examiner
Art Unit 1723

AF
January 16, 2006